

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Kansas City from both Nodaway Co. MO and Gray Co. KS Wind Generation Sites									
Metro Area Being Served is Kansas City	Average Annual	Capacity Factor of	Fixed Price of Wind	Annual Bus Bar	Transmission System Losses			Net Delivered	Total Annual Cost of Wind
Location of Wind Farm	Wind Speed m / s	Wind Generation %	Generation at Bus Bar \$/ Mwh	Generation 2,000 Mwh	Losses at Peak %	Loss Factor %	Annual Losses Mwh	Annual Generation Mwh	Generation at Bus Bar Millions \$
Nodaway Co. MO (Local WF)	7.2	28.40%	\$41.23	4,975,680	2.00%	16.64%	58,316	4,917,364	\$205.14
Gray Co. KS (Remote WF)	8.8	36.20%	\$28.64	6,342,240	6.84%	22.54%	270,038	6,072,202	\$181.63

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Nodaway Co. MO (Local WF)	\$100.11	15.00%	25%	\$18.77	\$33.10	-	15.50%	25%	\$6.41
Gray Co. KS (Remote WF)	\$169.57	18.00%	10%	\$33.57	\$14.19	\$420.00	15.50%	25%	\$67.85

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered	Net Delivered	Cost Change
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$	Annual Generation Mwh	Cost of Wind Generation \$/ Mwh	With HVDC \$/ Mwh
Nodaway Co. MO (Local WF)	\$18.77	\$6.41	\$205.14	\$230.32	4,917,364	\$46.84	
Gray Co. KS (Remote WF)	\$33.57	\$67.85	\$181.63	\$283.06	6,072,202	\$46.62	(\$0.224)

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Kansas City from both Greenwood Co. KS and Gray Co. KS Wind Generation Sites									
Metro Area Being Served is Kansas City	Average Annual	Capacity Factor of	Fixed Price of Wind	Annual Bus Bar	Transmission System Losses			Net Delivered	Total Annual Cost of Wind
<u>Location of Wind Farm</u>	Wind Speed m / s	Wind Generation %	Generation at Bus Bar \$/ Mwh	Generation 2,000 Mwh	Losses at Peak %	Loss Factor %	Annual Losses Mwh	Annual Generation Mwh	Generation at Bus Bar Millions \$
Greenwood Co. KS (Local WF)	8.3	35.50%	\$29.54	6,219,600	2.00%	22.00%	77,077	6,142,523	\$183.74
Gray Co. KS (Remote WF)	8.8	36.20%	\$28.64	6,342,240	6.84%	22.54%	270,038	6,072,202	\$181.63

<u>Location of Wind Farm</u>	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Greenwood Co. KS (Local WF)	\$75.10	15.00%	25%	\$14.08	\$30.64	-	15.50%	25%	\$5.94
Gray Co. KS (Remote WF)	\$169.57	18.00%	10%	\$33.57	\$14.19	\$300.00	15.50%	25%	\$49.25

Summary & Total Wind Generation & Transmission Costs							
<u>Location of Wind Farm</u>	Summary of Annual Costs				Net Delivered	Net Delivered	Cost Change
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$	Annual Generation Mwh	Wind Generation \$/ Mwh	With HVDC \$/ Mwh
Greenwood Co. KS (Local WF)	\$14.08	\$5.94	\$183.74	\$203.76	6,142,523	\$33.17	
Gray Co. KS (Remote WF)	\$33.57	\$49.25	\$181.63	\$264.46	6,072,202	\$43.55	\$10.380

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to St. Louis from both Montgomery Co. MO and Gray Co. KS Wind Generation Sites									
Metro Area Being Served is St. Louis	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$ / Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
Location of Wind Farm					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Montgomery Co. MO (Local WF)	7.2	28.40%	\$41.23	4,975,680	2.00%	16.64%	58,316	4,917,364	\$205.14
Gray Co. KS (Remote WF)	8.8	36.20%	\$28.64	6,342,240	9.95%	22.54%	392,940	5,949,300	\$181.63

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Montgomery Co. MO (Local WF)	\$12.00	15.00%	50%	\$2.70	\$13.20	-	15.50%	50%	\$3.07
Gray Co. KS (Remote WF)	\$254.52	18.00%	10%	\$50.40	\$19.64	\$420.00	15.50%	25%	\$68.90

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$ / Mwh	Cost Change With HVDC \$ / Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Montgomery Co. MO (Local WF)	\$2.70	\$3.07	\$205.14	\$210.91	4,917,364	\$42.89	
Gray Co. KS (Remote WF)	\$50.40	\$68.90	\$181.63	\$300.93	5,949,300	\$50.58	\$7.693

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to St. Louis from both Montgomery Co. MO and Osceola Co. IA Wind Generation Sites									
Metro Area Being Served is St. Louis	Average Annual	Capacity Factor of Wind Generation	Fixed Price of Wind Generation at Bus Bar	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
<u>Location of Wind Farm</u>	Wind Speed m / s	Wind Generation %	\$ / Mwh	Mwh	Losses at Peak %	Loss Factor %	Annual Losses Mwh	Mwh	Millions \$
Montgomery Co. MO (Local WF)	7.2	28.40%	\$41.23	4,975,680	2.00%	16.64%	58,316	4,917,364	\$205.14
Osceola Co. IA (Remote WF)	8.0	33.90%	\$31.75	5,939,280	9.16%	20.76%	333,146	5,606,134	\$188.56

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Montgomery Co. MO (Local WF)	\$12.00	15.00%	50%	\$2.70	\$13.20	-	15.50%	50%	\$3.07
Osceola Co. IA (Remote WF)	\$235.57	18.00%	10%	\$46.64	\$19.64	\$420.00	15.50%	25%	\$68.90

Summary & Total Wind Generation & Transmission Costs							
<u>Location of Wind Farm</u>	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$/ Mwh	Cost Change With HVDC \$/ Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Montgomery Co. MO (Local WF)	\$2.70	\$3.07	\$205.14	\$210.91	4,917,364	\$42.89	
Osceola Co. IA (Remote WF)	\$46.64	\$68.90	\$188.56	\$304.11	5,606,134	\$54.25	\$11.356

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to St. Louis from both Montgomery Co. MO and Buffalo Co. SD Wind Generation Sites									
Metro Area Being Served is St. Louis	Average Annual	Capacity Factor of	Fixed Price of Wind Generation at Bus Bar	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
Location of Wind Farm	Wind Speed m / s	Wind Generation %	\$ / Mwh	Mwh	Losses at Peak %	Loss Factor %	Annual Losses Mwh	Mwh	Millions \$
Montgomery Co. MO (Local WF)	7.2	28.40%	\$41.23	4,975,680	2.00%	16.64%	58,316	4,917,364	\$205.14
Buffalo Co. SD (Remote WF)	9.0	40.80%	\$23.47	7,148,160	10.51%	26.18%	481,899	6,666,261	\$167.77

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Montgomery Co. MO (Local WF)	\$12.00	15.00%	50%	\$2.70	\$13.20	-	15.50%	50%	\$3.07
Buffalo Co. SD (Remote WF)	\$282.67	18.00%	10%	\$55.97	\$19.64	\$400.00	15.50%	25%	\$65.80

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$ / Mwh	Cost Change With HVDC \$ / Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$	Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$ / Mwh	Cost Change With HVDC \$ / Mwh
Montgomery Co. MO (Local WF)	\$2.70	\$3.07	\$205.14	\$210.91	4,917,364	\$42.89	
Buffalo Co. SD (Remote WF)	\$55.97	\$65.80	\$167.77	\$289.54	6,666,261	\$43.43	\$0.544

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to SE Wisconsin from both Iowa Co. WI and Osceola Co. IA Wind Generation Sites									
Metro Area Being Served is SE Wisconsin	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$ / Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
Location of Wind Farm					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Iowa Co. WI (Local WF)	6.3	19.80%	\$66.61	3,468,960	2.00%	10.60%	37,151	3,431,809	\$231.05
Osceola Co. IA (Remote WF)	8.0	33.90%	\$31.75	5,939,280	7.10%	20.76%	258,378	5,680,902	\$188.56

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Iowa Co. WI (Local WF)	\$149.70	15.00%	25%	\$28.07	\$27.63	-	15.50%	25%	\$5.35
Osceola Co. IA (Remote WF)	\$186.96	18.00%	10%	\$37.02	\$24.59	\$420.00	15.50%	25%	\$69.86

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$ / Mwh	Cost Change With HVDC \$ / Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Iowa Co. WI (Local WF)	\$28.07	\$5.35	\$231.05	\$264.47	3,431,809	\$77.07	
Osceola Co. IA (Remote WF)	\$37.02	\$69.86	\$188.56	\$295.45	5,680,902	\$52.01	(\$25.059)

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to SE Wisconsin from both Iowa Co. WI and Buffalo Co. SD Wind Generation Sites									
Metro Area Being Served is SE Wisconsin	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$/ Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
Location of Wind Farm					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Iowa Co. WI (Local WF)	6.3	19.80%	\$66.61	3,468,960	2.00%	10.60%	37,151	3,431,809	\$231.05
Buffalo Co. SD (Remote WF)	9.0	40.80%	\$23.47	7,148,160	9.95%	26.18%	456,316	6,691,844	\$167.77

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Iowa Co. WI (Local WF)	\$149.70	15.00%	25%	\$28.07	\$27.63	-	15.50%	25%	\$5.35
Buffalo Co. SD (Remote WF)	\$277.41	18.00%	10%	\$54.93	\$24.59	\$400.00	15.50%	25%	\$66.76

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$/ Mwh	Cost Change With HVDC \$/ Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Iowa Co. WI (Local WF)	\$28.07	\$5.35	\$231.05	\$264.47	3,431,809	\$77.07	
Buffalo Co. SD (Remote WF)	\$54.93	\$66.76	\$167.77	\$289.46	6,691,844	\$43.26	(\$33.810)

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Central Iowa from both Hardin Co. IA and Osceola Co. IA Wind Generation Sites									
Metro Area Being Served is Central Iowa	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$ / Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
Location of Wind Farm					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Hardin Co. IA (Local WF)	7.7	32.30%	\$34.17	5,658,960	2.00%	19.55%	68,493	5,590,467	\$193.39
Osceola Co. IA (Remote WF)	8.0	33.90%	\$31.75	5,939,280	2.50%	20.76%	90,949	5,848,331	\$188.56

Transmission Line Costs					Transmission Substation Costs				
Location of Wind Farm	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Hardin Co. IA (Local WF)	\$88.94	15.00%	25%	\$16.68	\$17.43	-	15.50%	25%	\$3.38
Osceola Co. IA (Remote WF)	\$113.19	18.00%	25%	\$25.47	\$18.07	\$0.00	15.50%	25%	\$3.50

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net	Net	Cost
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$	Delivered Annual Generation Mwh	Delivered Cost of Wind Generation \$ / Mwh	Change With Remote Wind Farm \$ / Mwh
Hardin Co. IA (Local WF)	\$16.68	\$3.38	\$193.39	\$213.44	5,590,467	\$38.18	
Osceola Co. IA (Remote WF)	\$25.47	\$3.50	\$188.56	\$217.53	5,848,331	\$37.20	(\$0.984)

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Central Iowa from both Hardin Co. IA and Buffalo Co. SD Wind Generation Sites									
Metro Area Being Served is Central Iowa	Average Annual	Capacity Factor of	Fixed Price of Wind	Annual Bus Bar	Transmission System Losses			Net Delivered	Total Annual Cost of Wind
Location of Wind Farm	Wind Speed m / s	Wind Generation %	Generation at Bus Bar \$/ Mwh	Generation 2,000 Mwh	Losses at Peak %	Loss Factor %	Annual Losses Mwh	Annual Generation Mwh	Generation at Bus Bar Millions \$
Hardin Co. IA (Local WF)	7.7	32.30%	\$34.17	5,658,960	2.00%	19.55%	68,493	5,590,467	\$193.39
Buffalo Co. SD (Remote WF)	9.0	40.80%	\$23.47	7,148,160	7.57%	26.18%	347,253	6,800,907	\$167.77

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Hardin Co. IA (Local WF)	\$88.94	15.00%	25%	\$16.68	\$17.43	-	15.50%	25%	\$3.38
Buffalo Co. SD (Remote WF)	\$203.35	18.00%	10%	\$40.26	\$19.29	\$440.00	15.50%	25%	\$71.94

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered	Net Delivered	Cost Change
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$	Annual Generation Mwh	Cost of Wind Generation \$/ Mwh	With HVDC \$/ Mwh
Hardin Co. IA (Local WF)	\$16.68	\$3.38	\$193.39	\$213.44	5,590,467	\$38.18	
Buffalo Co. SD (Remote WF)	\$40.26	\$71.94	\$167.77	\$279.97	6,800,907	\$41.17	\$2.988

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Chicago from both Dekalb Co. IL and Osceola Co. IA Wind Generation Sites									
Metro Area Being Served is Chicago	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$ / Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
<u>Location of Wind Farm</u>					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Dekalb Co. IL (Local WF)	7.4	30.10%	\$37.93	5,273,520	2.00%	17.90%	62,712	5,210,808	\$200.01
Osceola Co. IA (Remote WF)	8.0	33.90%	\$31.75	5,939,280	8.13%	20.76%	295,762	5,643,518	\$188.56

<u>Location of Wind Farm</u>	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Dekalb Co. IL (Local WF)	\$56.51	15.00%	25%	\$10.60	\$16.84	-	15.50%	25%	\$3.26
Osceola Co. IA (Remote WF)	\$201.86	18.00%	10%	\$39.97	\$18.33	\$420.00	15.50%	25%	\$68.65

Summary & Total Wind Generation & Transmission Costs							
<u>Location of Wind Farm</u>	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$ / Mwh	Cost Change With HVDC \$ / Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Dekalb Co. IL (Local WF)	\$10.60	\$3.26	\$200.01	\$213.87	5,210,808	\$41.04	
Osceola Co. IA (Remote WF)	\$39.97	\$68.65	\$188.56	\$297.18	5,643,518	\$52.66	\$11.615

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Chicago from both Dekalb Co. IL and Buffalo Co. SD Wind Generation Sites									
Metro Area Being Served is Chicago	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$ / Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
<u>Location of Wind Farm</u>					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Dekalb Co. IL (Local WF)	7.4	30.10%	\$37.93	5,273,520	2.00%	17.90%	62,712	5,210,808	\$200.01
Buffalo Co. SD (Remote WF)	9.0	40.80%	\$23.47	7,148,160	11.43%	26.18%	524,312	6,623,848	\$167.77

<u>Location of Wind Farm</u>	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Dekalb Co. IL (Local WF)	\$56.51	15.00%	25%	\$10.60	\$16.84	-	15.50%	25%	\$3.26
Buffalo Co. SD (Remote WF)	\$305.49	18.00%	10%	\$60.49	\$18.33	\$400.00	15.50%	25%	\$65.55

Summary & Total Wind Generation & Transmission Costs							
<u>Location of Wind Farm</u>	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$ / Mwh	Cost Change With HVDC \$ / Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Dekalb Co. IL (Local WF)	\$10.60	\$3.26	\$200.01	\$213.87	5,210,808	\$41.04	
Buffalo Co. SD (Remote WF)	\$60.49	\$65.55	\$167.77	\$293.81	6,623,848	\$44.36	\$3.312

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Omaha from the Kimball Co. NE Wind Generation Site									
Metro Area Being Served is Omaha	Average Annual	Capacity Factor of	Fixed Price of Wind	Annual Bus Bar	Transmission System Losses			Net Delivered	Total Annual Cost of Wind
Location of Wind Farm	Wind Speed m / s	Wind Generation %	Generation at Bus Bar \$/ Mwh	Generation 2,000 Mwh	Losses at Peak %	Loss Factor %	Annual Losses Mwh	Annual Generation Mwh	Generation at Bus Bar Millions \$
No (Local WF)									
Kimball Co. NE (Remote WF)	7.8	31.90%	\$34.82	5,588,880	7.12%	19.24%	239,961	5,348,919	\$194.59

Location of Wind Farm	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
No (Local WF)									
Kimball Co. NE (Remote WF)	\$189.46	18.00%	10%	\$37.51	\$14.52	\$420.00	15.50%	25%	\$67.91

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm	Summary of Annual Costs				Net Delivered	Net Delivered	Cost Change
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$	Annual Generation Mwh	Cost of Wind Generation \$/ Mwh	With HVDC \$/ Mwh
No (Local WF)							
Kimball Co. NE (Remote WF)	\$37.51	\$67.91	\$194.59	\$300.02	5,348,919	\$56.09	\$56.089

Wind Generation Production Costs & Calculation of Delivered Costs for Local & Remote Wind Farms For Delivery of Power to Omaha from the Buffalo Co. SD Wind Generation Site									
Metro Area Being Served is Omaha	Average Annual Wind Speed m / s	Capacity Factor of Wind Generation %	Fixed Price of Wind Generation at Bus Bar \$/ Mwh	Annual Bus Bar Generation 2,000 Mwh	Transmission System Losses			Net Delivered Annual Generation Mwh	Total Annual Cost of Wind Generation at Bus Bar Millions \$
Location of Wind Farm No (Local WF)					Losses at Peak %	Loss Factor %	Annual Losses Mwh		
Buffalo Co. SD (Remote WF)	9.0	40.80%	\$23.47	7,148,160	5.55%	26.18%	254,348	6,893,812	\$167.77

Location of Wind Farm No (Local WF)	Transmission Line Costs				Transmission Substation Costs				
	Capital Cost of Lines Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$	Capital Cost of Substations Millions \$	Capital Cost of Converters Millions \$	Fixed Carrying Charge Rate %	Adder for Other Local Area Fixes %	Annual Cost Millions \$
Buffalo Co. SD (Remote WF)	\$142.39	18.00%	10%	\$28.19	\$14.52	\$400.00	15.50%	25%	\$64.81

Summary & Total Wind Generation & Transmission Costs							
Location of Wind Farm No (Local WF)	Summary of Annual Costs				Net Delivered Annual Generation Mwh	Net Delivered Cost of Wind Generation \$/ Mwh	Cost Change With HVDC \$/ Mwh
	Cost of Lines Millions \$	Cost of Substations Millions \$	Cost of Wind Generation at Bus Bar Millions \$	Total for Lines, Subs, & Wind Gen. Millions \$			
Buffalo Co. SD (Remote WF)	\$28.19	\$64.81	\$167.77	\$260.78	6,893,812	\$37.83	\$37.828